

**FUTURE FISHERIES IMPROVEMENT PROGRAM
GRANT APPLICATION**

(please fill in the highlighted areas)

I. APPLICANT INFORMATION

A. Applicant Name: Montana Fish Wildlife & Parks (David Moser and Cory Loecker)

B. Mailing Address: 4600 Giant Springs Rd.

C. City: Great Falls State: MT Zip: 59405

Telephone: 406-791-7775 (David Moser, Fisheries Biologist) 406-454-5864 (Cory Loecker, Wildlife Biologist)

D. Contact Person: David Moser or Cory Loecker

Address if different from Applicant:

City: State: Zip:

Telephone:

E. Landowner and/or Lessee Name
(if other than Applicant): Voegele's Inc., Landowner --- (Sieben Livestock, Lessee)

Mailing Address: P.O. Box 1122 (P.O. Box 835)

City: Great Falls --- (Helena) State: MT Zip: 59403 --- (59624)

Telephone: On request

II. PROJECT INFORMATION*

A. Project Name: Cottonwood Creek Riparian Habitat Enhancement Project

River, stream, or lake: Cottonwood Creek

Location: Township T14N Range R02W Section Section 1, 12

County: Lewis and Clark County

B. Purpose of Project:

Address grazing impacts to upper Cottonwood, Wagner, and Frazier creeks through pasture fencing. Most of Cottonwood Creek is on the Beartooth Wildlife Management Area and has been an area of focus for Westslope cutthroat trout restoration. A fish barrier was constructed at the lower end of Cottonwood Creek in 2010. Numerous piscicide treatments were finally successful in removing non-native brook trout from Cottonwood Creek. Westslope cutthroat trout have been restored to approximately 8 miles of Cottonwood Creek from upper Missouri Basin native WCT populations (Threemile and Whites Creek). This project will address concerns with grazing impacts in the headwaters of Cottonwood Creek. These impacts reduce habitat quality through input of fine sediments, over widening of the stream channel, and simplification of habitat (e.g. reduction in overwintering pool habitat).

C. Brief Project Description:

See attached Cottonwood Creek Riparian Habitat Enhancement Project

D. Length of stream or size of lake that will be treated:

1 mile of Cottonwood Creek, 2 miles of Wagner Creek, and 1 mile of Frazier Creek

E. Project Budget: \$16,448

Grant Request (Dollars):

\$ \$8,448

Contribution by Applicant (Dollars): \$

In-kind \$

\$8,000

(salaries of government employees are not considered as matching contributions)

Contribution from other Sources (Dollars): \$

In-kind \$

(attach verification - See page 2 budget template)

Total Project Cost:

\$ \$16,448

F. Attach itemized (line item) budget – see template

G. Attach specific project plans, detailed sketches, plan views, photographs, maps, evidence of landowner consent, evidence of public support, and/or other information necessary to evaluate the merits of the project. If project involves water leasing or water salvage complete supplemental questionnaire (fwp.mt.gov/habitat/futurefisheries/supplement2.doc).

H. Attach land management and maintenance plans that will ensure protection of the reclaimed area.

III. PROJECT BENEFITS*

A. What species of fish will benefit from this project?:

Westslope cutthroat trout (*Oncorhynchus clarkii lewisi*) and non-native salmonids in Frazier and Wagner creeks

B. How will the project protect or enhance wild fish habitat?:

This project will help protect and restore riparian and instream habitat in Cottonwood Creek, a focal area of WCT restoration efforts in the upper Missouri Basin. The project will also protect riparian and instream habitat in Frazier and Wagner creeks.

Genetically pure WCT occupy about 8% of their historical range in the western United States and less than 4% of their historical range in northcentral Montana within the Missouri River drainage. The Upper Missouri drainage in Montana currently supports 19 genetically unaltered populations of pure WCT (44.4 miles occupying less than 2.4% of historically occupied habitat). Projects which restore and replicate WCT to historically occupied habitats are necessary to ensure the continued survival of WCT in the upper Missouri Drainage and elsewhere.

In 2000, a concrete fish barrier was constructed on Cottonwood Creek in an effort to restore WCT to approximately 8 miles of stream. Multiple piscicide treatments and electrofishing were necessary to completely remove brook trout because of problems with springs, seeps, and beaver dams. In 2009, WCT eggs were collected from Threemile Creek and Whites creeks, fertilized, and hatched in remote site incubators near the headwaters of Cottonwood Creek. The transfer of Threemile Creek WCT was initiated prior to barrier replacement because of concerns related to a transfer of land ownership on Threemile Creek and associated loss of security. Funding was obtained from Future Fisheries and PPL Montana and a new fish barrier was constructed in 2009. Subsequent sampling has revealed that transfers of native WCT were successful. **See attached Cottonwood Creek Westslope Cutthroat Trout Report**

C. Will the project improve fish populations and/or fishing? To what extent?:

This project will improve both riparian habitat and improve stream conditions to the benefit of westslope cutthroat trout in Cottonwood Creek and existing non-native fish populations in Frazier and Wagner creeks. Primary benefits would include improvement in spawning habitat through decreases in fine sediment inputs. Additional benefit from riparian protection would likely include widening and deepening of the stream channel and an increase in overwintering habitat.

D. Will the project increase public fishing opportunity for wild fish and, if so, how?:

This project will improve the fishery in Cottonwood Creek which is accessible to the public

E. If the project requires maintenance, what is your time commitment to this project?:

Maintenance will be the responsibility of the lessee and the Beartooth Wildlife Management Area (Sieben Livestock and Montana Fish, Wildlife and Parks.)

F. What was the cause of habitat degradation in the area of this project and how will the project correct the cause?:

Grazing impacts were the cause of habitat degradation. The proposed fencing project would split the pasture and allow rest-rotation grazing schemes. Similar grazing management on the Beartooth Wildlife Management Area has been successful. **See attached Cottonwood Creek Riparian Habitat Enhancement Project**

G. What public benefits will be realized from this project?:

Improvement to fish and wildlife habitat on and adjacent to the Beartooth Wildlife Management Area.

H. Will the project interfere with water or property rights of adjacent landowners? (explain):

No

I. Will the project result in the development of commercial recreational use on the site?: (explain):

No

J. Is this project associated with the reclamation of past mining activity?:

No

Each approved project sponsor must enter into a written agreement with the Department specifying terms and duration of the project.

IV. AUTHORIZING STATEMENT

I (we) hereby declare that the information and all statements to this application are true, complete, and accurate to the best of my (our) knowledge and that the project or activity complies with rules of the Future Fisheries Improvement Program.

Applicant Signature:

Date:

5 / 31 / 2012

Sponsor (if applicable):

***Highlighted boxes will automatically expand.**

Mail To:

**Montana Fish, Wildlife & Parks
Habitat Protection Bureau
PO Box 200701
Helena, MT 59620-0701**

Incomplete or late applications will be returned to applicant.

Applications may be rejected if this form is modified.

*****Applications may be submitted at anytime, but must be received by the Future Fisheries Program office in Helena before December 1 and June 1 of each year to be considered for the subsequent funding period.*****

Project Title: **Cottonwood Creek Riparian Habitat Enhancement Project**

Project Location: Beartooth Wildlife Management Area / Voegelé's Inc. – Cottonwood Creek

Legal Description: T14N, R02W, Section 1, 12

Affected Watersheds: Cottonwood, Frazier, Wagner Creeks which flow to Missouri River

Affected Species: Westslope Cutthroat Trout in Cottonwood Creek

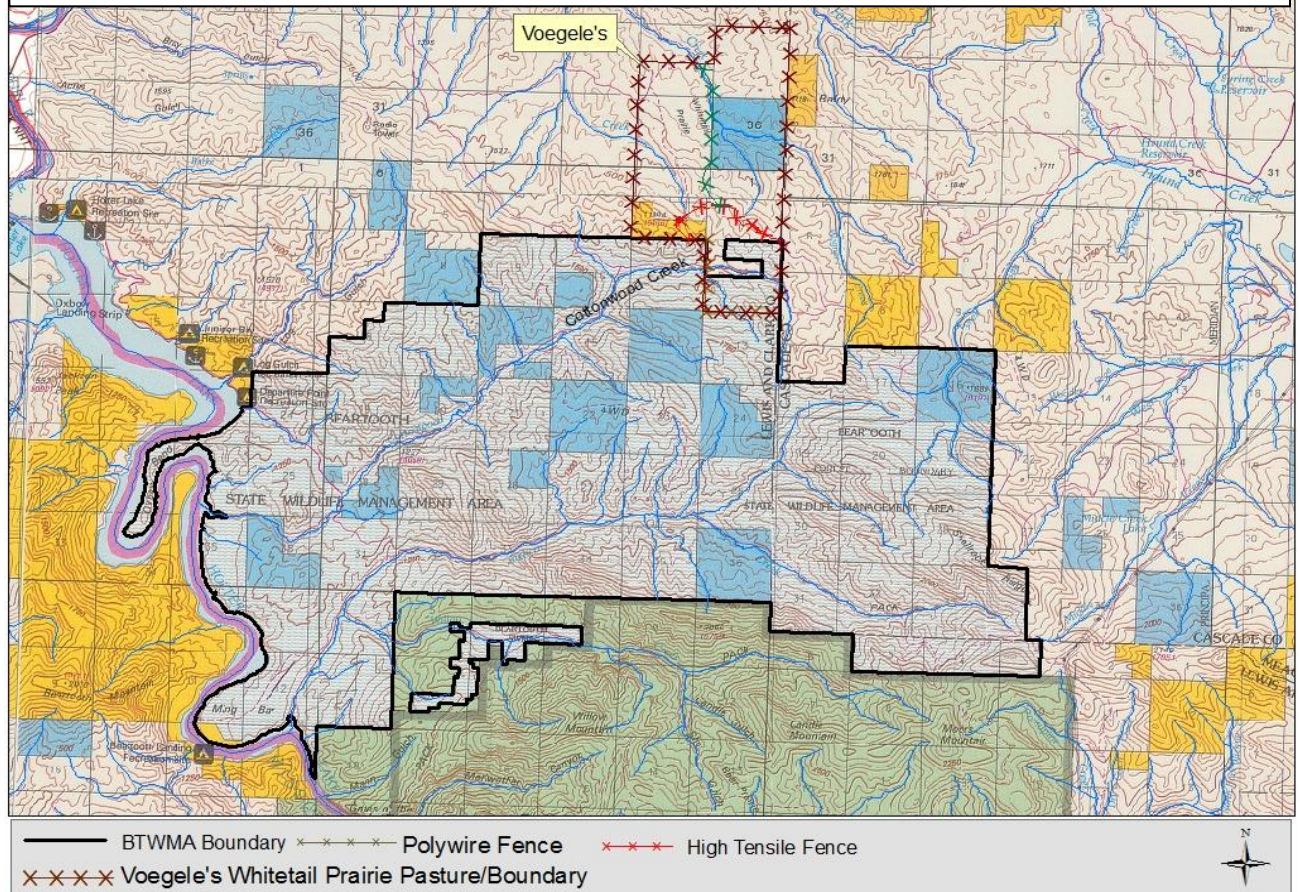
Project Need: Historically Voegelé's Inc property (locally known as Whitetail Prairie) and a portion of the Beartooth WMA (BTWMA) (Section 12) are grazed by together as the boundary fence for the BTWMA is located on the south section line of Section 12 due to topography. Thus Section 12 (480 acres) of BTWMA property is grazed with Whitetail Prairie. Whitetail Prairie grazing is leased by Sieben Live Stock. Sieben Live Stock has been a long time grazing lessee with Voegelé's and FWP. Whitetail Prairie and adjacent Sieben Live Stock property in Cottonwood, Wagner, Frazier and Stickney Creek drainages are utilized during summer/fall months as a yearling cattle grazing system, which also include the 480 acres of BTWMA lands on Cottonwood Creek (Appendix A). Whitetail Prairie is broken into 2 pastures to better manage cattle distribution and vegetation use. A single strand polywire is utilized in the north side of Whitetail Prairie to split it into an east and west side, working very well (Appendix B). Another polywire was attempted to split the Cottonwood Creek area off running east and west in Sections 1 and 2 (making 3 pastures). This was attempted the last few years with limited success as yearling cattle's demand to utilize the Cottonwood Creek area is higher than the polywire strength.

Historically and recently, this stretch of Cottonwood Creek gets overgrazed by cattle despite attempts to move cattle with salt, fence and herding out of the riparian areas of Cottonwood Creek. It is proposed to install a 3-strand high tensile fence on the ridgeline running east and west in Sections 1 and 2 to replace the temporary polywire (Appendix C). This would allow the lessee to keep cattle north of fence in pastures 1 and 2. After fencing, Pasture 3 (Cottonwood Creek) will then be put into a rest-rotation grazing program starting summer 2012. Summer 2012 = complete rest; 2013 = early season rest, after seed ripe grazing; 2014= early season grazing, fall rest. With this system, the Cottonwood pasture will have 2 out of 3 years growing season rest, with one of those years being year round complete rest. This will greatly enhance the riparian habitats on Cottonwood Creek. This rest rotation system is utilized on the downstream adjacent Cottonwood Creek of the Beartooth WMA "Polloch Meadows pasture" with great success (see pict). Riparian habitats of Cottonwood Creek will be greatly enhanced over time with the capability of managing livestock use in the Cottonwood Creek drainage, benefiting westslope cutthroat and wildlife species alike. This will also allow better livestock management of Pastures 1 and 2, benefiting the Frazier and Wagner Creek drainages.

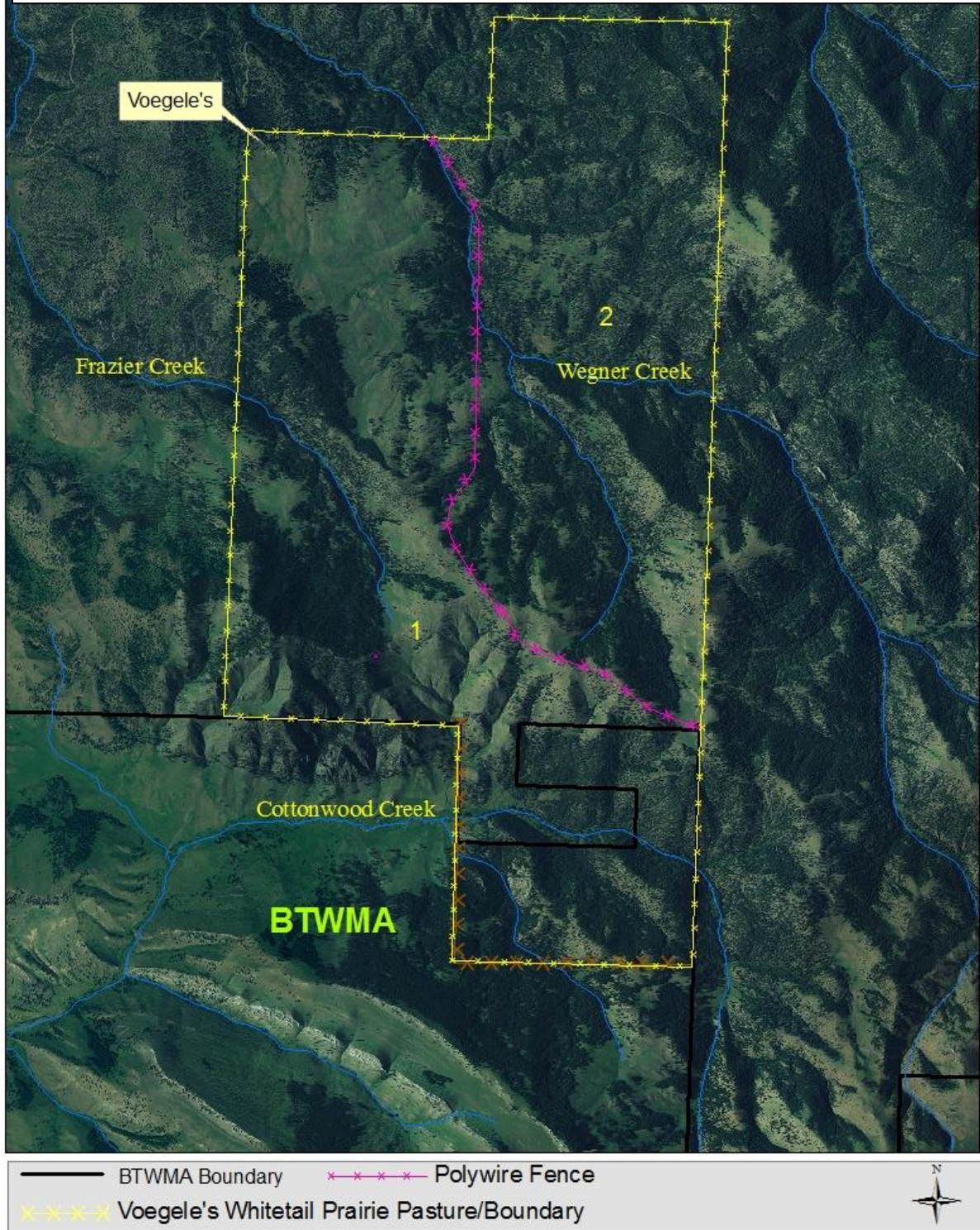
Estimated Costs: 2.0 miles of 3 strand high tensile fence @ approximately \$0.80 / foot = 10,560 feet x \$0.80 = **\$8,448**. Project will be out for bid after funding is secured. Installation will occur summer 2012. NRCS cost for 2-5 wire with energizer is \$0.61/ft. Since it is mountainous terrain, an additional 30% was added to the cost estimate.

Submitted by: Cory Loecker, Montana FWP, Wildlife Biologist, Great Falls, MT. Landowner partners include: Voegele's Inc. and Sieben Live Stock

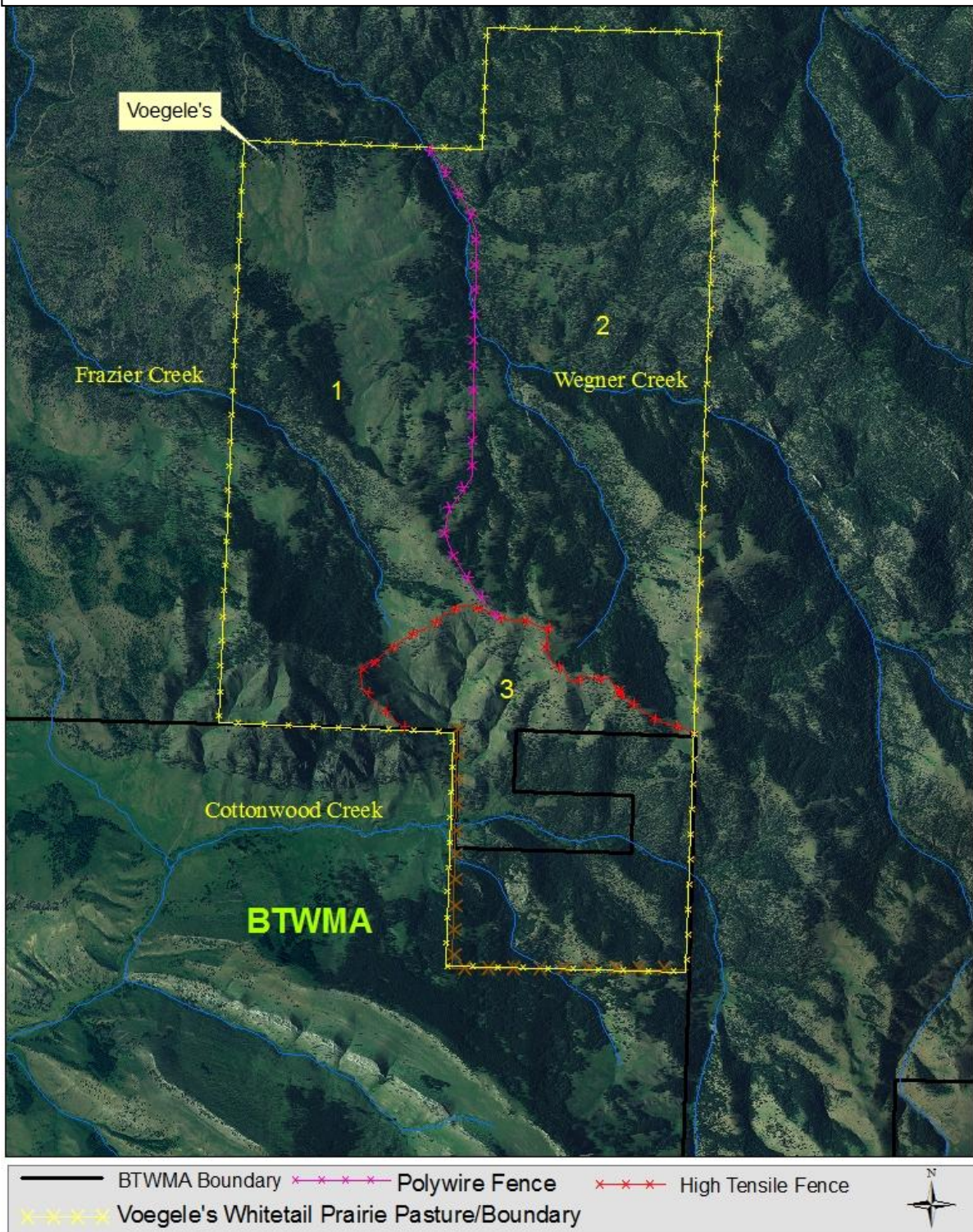
Appendix A. Project Location – Beartooth WMA / Voegele's Whitetail Prairie Cottonwood Creek.



Appendix B. Voegelé's Whitetail Prairie / BTWMA Pasture



Appendix C. Voegelé's Whitetail Prairie / BTWMA Pasture.





Cottonwood Creek Riparian Habitat – Beartooth WMA “Polloch Meadows pasture” pasture on other side of fence. Voegele’s Whitetail Prairie Cottonwood Creek pasture in forefront.

Cottonwood Creek Westslope Cutthroat Restoration Efforts

January 2012

Montana Fish, Wildlife & Parks

INTRODUCTION

Westslope cutthroat trout (WCT; *Oncorhynchus clarkii lewisi*) were first described by Lewis and Clark in 1805 near Great Falls, Montana. WCT are recognized as one of 14 interior subspecies of cutthroat trout and are found in Alberta, Idaho, Washington, and Montana. In Montana, WCT occupy the Upper Missouri River drainages east of the Continental Divide and the Upper Columbia Basin west of the Continental Divide (Behnke 1992). Although still widespread, WCT distribution and numbers have declined significantly in the past 100 years due to a variety of causes, including loss of habitat, competition and predation from non-native fish species, and hybridization (Shepard et al. 2003, Shepard et al. 1997, McIntyre and Rieman 1995, Liknes 1984, Hanzel 1959). Genetically unaltered WCT currently occupy approximately 8% of their historic habitat across their entire range (Shepard et al. 2003).

The marked decrease in WCT density and distribution led to them being listed in 1972 as a State Species of Special Concern by the Montana Department of Fish, Wildlife and Parks (MFWP). WCT were petitioned for listing as threatened under the federal Endangered Species Act in June 1997. The state of Montana developed a statewide WCT Conservation Agreement in 1999 (MFWP 1999) with the help of a technical committee formed in 1994 and a steering committee formed in 1996. The Conservation Agreement was signed by several state and federal agencies as well as several non-government organizations. In 2000, a north-central Montana WCT restoration plan was developed to implement the goals and objectives of the WCT Conservation Agreement (Tews et al. 2000). In 2007, an updated subbasin plan (Moser et al. 2009) was drafted to monitor WCT restoration progress and refocus goals toward objectives outlined in an updated WCT Conservation Agreement (MFWP 2007).

In April of 2000, following an extensive status review, the U.S. Fish and Wildlife Service (USFWS) determined that westslope cutthroat trout were “not warranted” for federal listing. That finding was challenged in federal court, and the court remanded the not warranted finding back to the USFWS for additional review. In 2003, after additional review, the USFWS determined that WCT are not likely to become a threatened or endangered species in the foreseeable future, therefore listing was not warranted. The second finding of “not warranted” is again being challenged in federal court.

In 2001, in an effort to implement and fund the original WCT restoration plan (Tews et al. 2000), a Federal Challenge Cost Share Agreement was established between MFWP and the United States Forest Service (USFS). In addition, the Wildlife Conservation and Restoration Program (WCRP) and the State Wildlife Grants (SWG) programs were established to provide states with federal aid funding to conserve declining fish and wildlife and their habitats. These programs provided funding from 2002 to 2011. PPL Montana has provided funding for a fish and wildlife technician and several restoration projects in the Highwood Mountains and on the Beartooth Wildlife Management Area (2003 to 2011). In addition, The Future Fisheries Program (MFWP) has provided funding for personnel and numerous restoration projects across north-central Montana.

Costs associated with WCT restoration primarily come from the need to construct physical barriers to upstream fish movement by competing and hybridizing species. Additional costs include removal of non-native species with piscicides or electrofishing and re-introduction of nearest neighbor non-hybridized WCT into protected fishless reaches of stream. Opportunities for restoration are commonly driven by construction sites conducive to barrier construction and the willingness of landowners to accept the measures necessary to restore WCT.

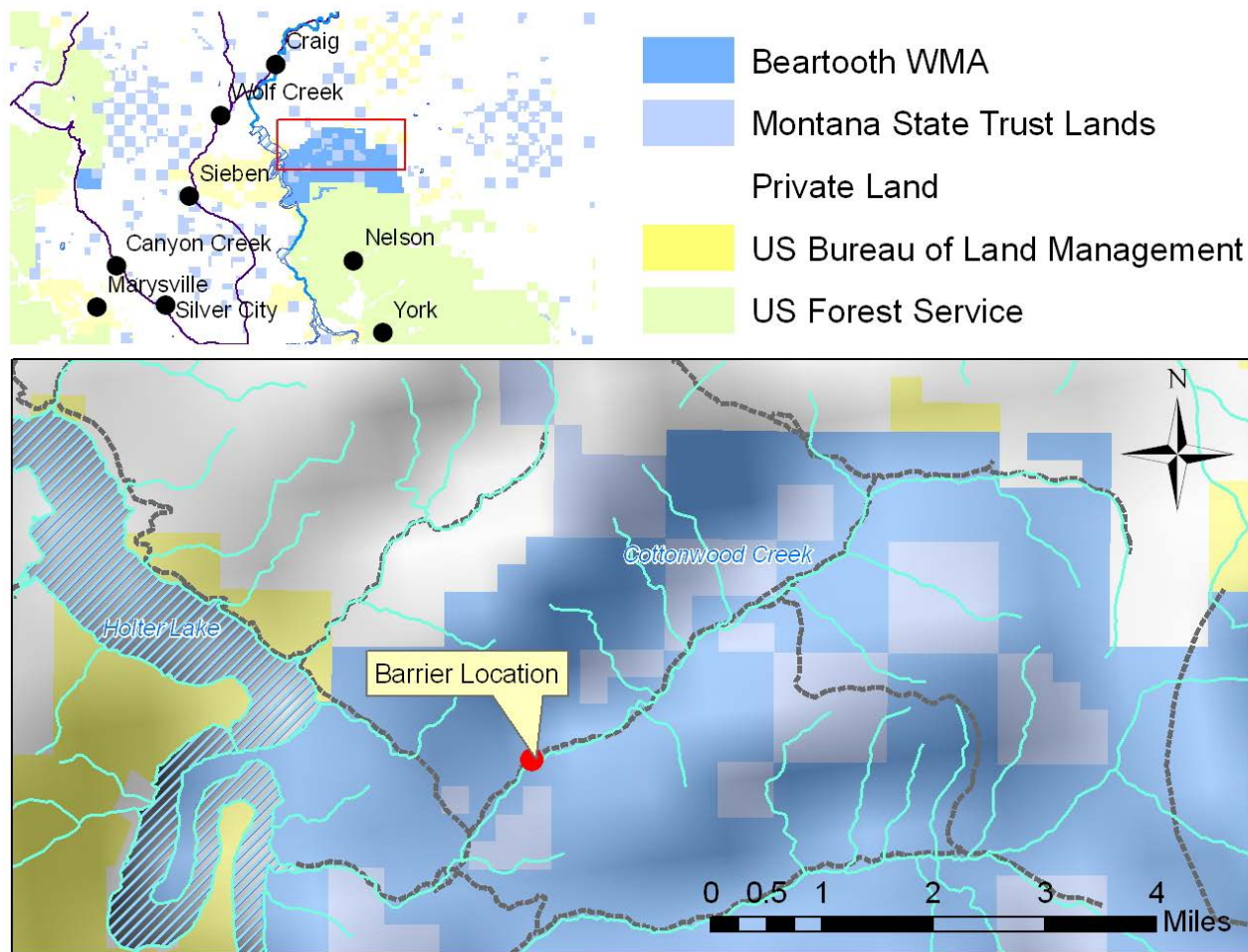


Figure 1. Location and vicinity of Cottonwood Creek fish barrier.

COTTONWOOD CREEK

Cottonwood Creek, a tributary to Holter Reservoir, is one of several streams on the Beartooth Wildlife Management Area that likely historically supported WCT. In 2000, MFWP biologists and technicians constructed a concrete fish barrier in an effort to restore WCT to approximately eight miles of upper Cottonwood Creek (Figures 1 and 2). Cottonwood Creek upstream of the fish barrier was treated twice with piscicides in 2003. In 2006, three age classes of brook trout, representing two years of natural reproduction were found in Cottonwood Creek upstream of the barrier constructed in 2000. Brook trout that survived the treatment had found refugia in several areas of Cottonwood Creek with significant upwelling. Cottonwood Creek was again treated twice with rotenone in 2007. In 2008, two brook trout were removed just upstream of the constructed barrier a few days post spring run-off. In 2009, the full length of Cottonwood Creek was electrofished and found to be free of brook trout. Based on these surveys, efforts were initiated to restore WCT to Cottonwood Creek. Two donor streams, Threemile and Whites creeks, were identified within the Upper Missouri River Drainage. WCT eggs were collected, fertilized, and raised to eye-up stage in a MFWP hatchery facility. Eyed eggs were outplanted in Remote Site Incubators (RSI's). Because of concerns related to high flow passage of brook trout over the existing fish barrier, an analysis of flow recurrence based on USGS regressions and basin size was developed. In 2009, a contractor (Mainstream Restoration, Bozeman, MT) was hired to design a fish barrier that would be more effective at higher flows. Funding for design and construction of the new fish barrier was obtained from Future Fisheries of Montana and PPL Montana. The new barrier was constructed in late summer of 2010. The barrier was based on a similar design used in Whites Gulch that utilized all pre-cast concrete materials (Figures 3 and Figure 4). Electrofishing surveys of Cottonwood Creek upstream of the barrier in 2010 revealed that the prior year's eyed-egg transfer was successful. Fifteen westslope cutthroat trout were captured and ranged from 193 to 247 mm (7.5 – 9.5 inches). These large sizes are not typical of WCT growth rates in other streams; whether natural, or outplanted in RSI's. WCT in this stream are not currently resource limited and they may be benefitting from riparian productivity and productivity related to the limestone geology of the area. However, it is still surprising that approximately one year old plus fish reached lengths greater than 9 inches (Figure 5). When restoration efforts are complete, Cottonwood Creek will support non-hybridized westslope cutthroat trout in approximately eight miles of stream. This will be an increase of 19% of stream miles supporting non-hybridized WCT in the Upper-Missouri Drainage (43 miles to 51 miles). In addition to stream miles; this project will help preserve the genetic legacy of WCT obtained from donor streams should they ever be extirpated because of catastrophic events such as fire, drought, and disease outbreaks.



Figure 2. Original fish barrier constructed in 2000.



Figure 3. Construction of Cottonwood Creek fish barrier, Beartooth Wildlife Management Area, 2010.



Figure 4. Newly constructed fish barrier on Cottonwood Creek (Beartooth Wildlife Management Area), 2010.



Figure 5. One year old WCT captured in Cottonwood Creek, Beartooth Wildlife Management Area, 2010.

BUDGET AND FUNDING SOURCES FISH BARRIER PROJECT

As per the attached budget summary sheet, the total cost of the project was approximately \$130,972, which included approximately \$13,025 for surveying, design, and engineering and \$103,545 for construction. Oversight included a contract with a design engineer (\$12,000) and in-kind oversight from the Design and Construction Bureau of MFWP. The majority of costs were split between Future Fisheries Montana (\$35,197) and the PPL Montana Missouri River fisheries protection, mitigation and enhancement program (\$72,750). Additional funding was acquired from Montana Fish, Wildlife & Parks (\$10,000).

Item	Paid by PPL to MFWP D&C	Paid by PPL to Mainstream Rest.	Paid by FF MFWP	Paid by MFWP
Project construction by Liggett Construction	\$72,750		\$32,765	
Oversight by Mainstream Restoration			\$2,000	\$10,000
Design by Mainstream Restoration		\$13,025		
Printing and advertising costs for bidding			\$432	
Total	\$72,750	\$13,025	\$35,197	\$10,000
Total Paid by PPL	\$85,775			
Grand Total Project Cost	\$130,972			

LITERATURE CITED

- Behnke, R.J. 1992. Native trout of western North America. American Fisheries Society, Monograph 6, Bethesda, MD.
- Hanzel, D. A. 1959. The distribution of the cutthroat Trout (*Salmo clarki*) in Montana. Master of Science Thesis. Montana State College, Bozeman, MT.
- Liknes, G.A. 1984. The present status and distribution of the westslope cutthroat trout (*Salmo clarki lewisi*) east and west of the continental divide in Montana. Report to Montana Department of Fish, Wildlife and Parks, Helena, MT.
- McIntyre, J.D. and B.E. Rieman. 1995. Westslope cutthroat trout. Pages 1-15 in M.K. Young editor. Conservation assessment for inland cutthroat trout. General Technical Report RM-256. Fort Collins, CO, USDA, Forest Service, Rocky Mountain Forest and Range Experiment Station.

- MFWP (Montana Department of Fish, Wildlife and Parks). 1999. Memorandum of understanding and conservation agreement for westslope cutthroat trout (*Oncorhynchus clarki lewisi*) in Montana. Montana Department of Fish, Wildlife and Parks.
- MFWP (Montana Department of Fish, Wildlife and Parks). 2007. Memorandum of Understanding and conservation agreement for westslope cutthroat trout and Yellowstone cutthroat trout in Montana. Montana Department of Fish, Wildlife and Parks.
- Moser, D., A. Tews, D. Yerk, G. Grisak, G. Liknes, M. Enk and A. Harper. 2009. Status and conservation needs for westslope cutthroat trout in north-central Montana. Montana Fish, Wildlife and Parks, Great Falls, MT.
- Shepard, B. B., B. Sanborn, L. Ulmer and D.C. Lee. 1997. Status and risk of extinction for westslope cutthroat trout in the upper Missouri River Basin. North American Journal of Fisheries Management, 17:1158-1172.
- Shepard, B.B., B.E. May and W. Urie. 2003. Status of westslope cutthroat trout (*Oncorhynchus clarki lewisi*) in the United States: 2003. Westslope Cutthroat Interagency Conservation Team. 94 pp.
- Tews, A., M. Enk, W. Hill, S. Dalbey, G. Liknes and S. Leathe. 2000. Westslope cutthroat trout (*Oncorhynchus clarki lewisi*) in north-central Montana: status and restoration strategies. Montana Fish, Wildlife and Parks in collaboration with the Lewis and Clark National Forest, Great Falls, MT.